

AMENDMENTS TO THE CLAIMS

CLAIM 1 (ORIGINAL): A charging apparatus that charges with voltage from an alternating current bicycle dynamo, wherein the charging apparatus comprises:

a rectifying circuit for rectifying the alternating current from the bicycle dynamo;

a full-wave charging element operatively coupled to the rectifying circuit for charging during both positive and negative half-cycles of the bicycle dynamo;

a first half-wave charging element operatively coupled to the rectifying circuit in parallel with the full-wave charging element, wherein the first half-wave charging element charges during positive half-cycles of said dynamo; and

a second half-wave charging element operatively coupled to the rectifying circuit in parallel with the full-wave charging element, wherein the second half-wave charging element charges during negative half-cycles of the dynamo.

CLAIM 2 (ORIGINAL): The charging apparatus according to claim 1 wherein the full-wave charging element comprises a secondary cell.

CLAIM 3 (ORIGINAL): The charging apparatus according to claim 1 wherein the first half-wave charging element is connected in series with the second half-wave charging element.

CLAIM 4 (ORIGINAL): The charging apparatus according to claim 1 wherein the full-wave charging element comprises an electric double layer capacitor.

CLAIM 5 (ORIGINAL): The charging apparatus according to claim 4 wherein the first half-wave charging element comprises a first electrolytic capacitor.

CLAIM 6 (ORIGINAL): The charging apparatus according to claim 5 wherein the second half-wave charging element comprises a second electrolytic capacitor.

CLAIM 7 (ORIGINAL): The charging apparatus according to claim 6 wherein the first electrolytic capacitor is connected in series with the second electrolytic capacitor.

CLAIM 8 (ORIGINAL): The charging apparatus according to claim 1 wherein the first half-wave charging element comprises a first electrolytic capacitor.

CLAIM 9 (ORIGINAL): The charging apparatus according to claim 8 wherein the second half-wave charging element comprises a second electrolytic capacitor.

CLAIM 10 (ORIGINAL): The charging apparatus according to claim 9 wherein the first electrolytic capacitor is connected in series with the second electrolytic capacitor.

CLAIM 11 (NEW): A charging apparatus that charges with voltage from an alternating current bicycle dynamo, wherein the charging apparatus comprises:

- a rectifying circuit for rectifying the alternating current from the bicycle dynamo;

- a full-wave charging element operatively coupled to the rectifying circuit for receiving and storing charge during both positive and negative half-cycles of the bicycle dynamo;

- a first half-wave charging element operatively coupled to the rectifying circuit in parallel with the full-wave charging element, wherein the first half-wave charging element receives and stores charge during positive half-cycles of said dynamo; and

- a second half-wave charging element operatively coupled to the rectifying circuit in parallel with the full-wave charging element, wherein the second half-wave charging element receives and stores charge during negative half-cycles of the dynamo;

- wherein the full-wave charging element, the first half-wave charging element and the second half-wave charging element all receive and store charge from the rectifying circuit; and

- wherein the full wave charging element receives and stores charge from the first half-wave charging element and from the second half-wave charging element in addition to charge received from the rectifying circuit.

CLAIM 12 (NEW): The charging apparatus according to claim 11 wherein the charge stored in the full-wave charging element is greater than the charge stored if no charge were received from the first half-wave rectifying circuit and from the second half-wave rectifying circuit.

CLAIM 13 (NEW): The charging apparatus according to claim 11 wherein the full-wave charging element comprises a secondary cell.

CLAIM 14 (NEW): The charging apparatus according to claim 11 wherein the first half-wave charging element is connected in series with the second half-wave charging element.

CLAIM 15 (NEW): The charging apparatus according to claim 11 wherein the full-wave charging element comprises an electric double layer capacitor.

CLAIM 16 (NEW): The charging apparatus according to claim 15 wherein the first half-wave charging element comprises a first electrolytic capacitor.

CLAIM 17 (NEW): The charging apparatus according to claim 16 wherein the second half-wave charging element comprises a second electrolytic capacitor.

CLAIM 18 (NEW): The charging apparatus according to claim 17 wherein the first electrolytic capacitor is connected in series with the second electrolytic capacitor.

CLAIM 19 (NEW): The charging apparatus according to claim 11 wherein the first half-wave charging element comprises a first electrolytic capacitor.

CLAIM 20 (NEW): The charging apparatus according to claim 19 wherein the second half-wave charging element comprises a second electrolytic capacitor.

CLAIM 21 (NEW): The charging apparatus according to claim 20 wherein the first electrolytic capacitor is connected in series with the second electrolytic capacitor.